heavy despite active promotion in the market.

(3) Holders of gold bullion, particularly in small amounts do not, in any practical sense, have a liquid investment. As a freely traded commodity there is always the risk of a substantial swing in the price. Over the past year the price of gold has made several short-run movements—down as well as up—of 15 percent or more. But even apart from the commodity price risk, there is a substantial gap between the buy-sell price necessarily quoted by dealers of gold in small quantities.

(4) Gold is an investment which gives no current return to the holder. At the present high level of interest rates this sacrifice is a considerable cost factor, particularly over an extended period of time.

(5) Investors in gold must take account of the very large stock of gold held in official reserves throughout the world. The United States alone holds about 276 million ounces, an amount several times larger than present annual world gold production. The possibility of using a portion of this reserve to satisfy new public demand is a factor that must be taken into account by any prudent investor.

(6) And finally, any banker contemplating gold dealing must recognize that he will face formidable competition from other sectors of the market, not to mention his fellow bankers. As a free commodity, gold in the coming year can be bought and sold by anyone. Whatever the extent of market demand the gold business is certain to be among the most highly competitive in the American economy. In this situation the profits to the average bank in gold sales are likely to be at best minor, even including a modest boost to the safe deposit rental business.

But even if the direct sale of gold turns out to be more of a cost burden rather than a source of revenue to banks, I doubt that our enterprising and innovative bankers will give up the game easily. For modern bankers the return of gold to commodity status in a sense turns the clock back to the 17th century when the goldsmiths of Lombard Street conceived the idea of issuing more and more paper receipts against less and less gold deposits and thereby established the basic principle of the modern banking system. But for American bankers of today there is a difference that should not be overlooked. Unlike the ancient Lombards, American bankers operate in an environment of long established and, on the whole, attentive federal and state regulatory authorities.

In assessing the gold market from a banker's viewpoint, the key point is that a free gold commodity market—with fluctuating prices determined by essentially unpredictable supply and demand—is a very recent historical phenomenon. As a practical matter the free gold market dates only from March 17, 1968 when the two-tier gold price came into being. For centuries prior to that date—the price of gold for anyone was rigidly fixed by political authorities based essentially on its monetary status. However, the one factor that has in the past distinguished gold from other commodities—a fixed trading price—has now gone by the board. The significance of this change, particularly for bankers, is profound. All of the banking traditions, institutional practices, regulations, and habits of thought pertaining to bank gold dealing, which have their roots in the long historical period prior to 1968, are largely irrelevant in the new environment. Gold is now a commodity priced in a free market and with a highly volatile recent price record. For banks, gold dealing under these conditions will be a wholly new activity for which the historical past offers no reliable guide—either for the bankers or the bank regulators. In this context we can assume that the banking authorities will be keeping a close watch on developments, and it would be reasonable to expect appropriate guidance will be forthcoming if the situation so warrants.

We will all note that Mr. Wolfe states that—

There is no residue of Government rules, regulations, guidelines or hints beyond those that would normally apply to business transactions in general. In short, the United States will have a gold market that is as free and open as in any country in the world.

Needless to say, this free-market economy is among the greatest strengths of our American system. I do not sell our American public short and I believe that the protection of this open and free market is the best protection of our system and ultimately of the individual citizen. I do not believe that the American public is so foolish as to be "fleeced, cheated, and defrauded" as easily as my colleague suggests. I am confident the American public will not be bamboozled by sleazy operators in the new gold market. I have great confidence in the American public to deal in this commodity as they have been dealing in other commodities, from precious gems to pork bellies, for many years.

I must say to my friend that I have a high regard for the innate shopping ability of the American consumer. That we will be offered a wide variety of gold ranging from certificates indicating ownership, to small bars, to bullion coins, to coins which are legal tender in other lands, will, I believe, again offer the American consumer the variety of choices to which he is entitled in this, as in any other market.

Regarding the allegation that no hearings were held on the question of private gold ownership, I would remind my friend that on numerous previous occasions over a period of years I have both formally and informally asked the distinguished chairman of our committee to hold such hearings.

The gentleman repeatedly asks that the Congress reassert its authority in this area. Of course, the Congress did—that is why the bill passed by such wide margins both here and in the other body. But a further point that deserves to be driven home is how can the Congress reassert its authority by giving the President the arbitrary authority to determine a date to permit private gold ownership? It is precisely this kind of congressional abdication which has, on the one hand, eroded the authority of the Congress over the years, and also denied the American citizens the right to own gold.

Mr. Speaker, I believe that the proper course in this matter lies not in returning to the executive branch the vast power it has exercised in this area for more than 40 years, but in returning to Congress yet another oversight responsibility—that of ruling on any effort to sell, alienate, or commit any of our gold reserves by the Secretary of the Treasury. I have already introduced legislation to this effect. My bill would prohibit the sale, alienation, or commitment of gold by the Secretary of the Treasury without prior approval by act of Congress. This is another area where the peoples' Representatives in Congress should have the right to oversee any action taken. If my colleague from Texas is, in fact, concerned over the abdication by Congress of its proper responsibilities, then I call upon him to join me as a cosponsor of this legislation. I have here a copy of my bill together with a "Dear Colleague" letter I circulated in September calling for support of the bill and ask that they be incorporated in the RECORD at this point:

H.R. 16594

A bill to prohibit the sale, alienation, or commitment of gold by the Secretary of the Treasury without prior approval by Act of Congress

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, notwithstanding section 3699 of the Revised Statutes (*31 U.S.C. 733*), section 10(a) of the Gold Reserve Act of 1934 (31 U.S.C. 822a (a)), or any other provision of law, or any rule, regulation or authority of any such law, the Secretary of the Treasury may not sell, alienate, or commit gold without prior, specific approval by Act of Congress.

HOUSE OF REPRESENTATIVES,
Washington, D.C., September 17, 1974.

DEAR COLLEAGUE: Last week I introduced legislation to prohibit the sale, alienation, or commitment of gold by the Secretary of the Treasury without prior approval by Act of Congress.

The Secretary of the Treasury has very broad outstanding authority to dispose of our gold. Current law provides that ". . . he may sell gold in any amount at home or abroad, in such manner and at such rates and upon such terms and conditions as he may deem most advantageous to the public interest . . ." I believe that the oversight authority provided by my bill properly belongs to the Congress. This is yet another area where the executive branch has unlimited power and where the people's Representatives in Congress should have the right to oversee any action taken.

There is clearly no valid reason for denying Congress the oversight authority provided by my bill. The Secretary of the Treasury was initially granted his broad powers for the purpose of stabilizing the value of our currency at a time when it was redeemable in gold. The gold-reserve requirements for Federal Reserve notes and deposits have been abolished, however, and the reduction of the monetary role of gold, begun in the days of the New Deal, has now been completed.

It is clear that the power to dispose of this national treasure, our gold reserves, must not rest in one individual. I plan to reintroduce this legislation requiring Congressional approval of the sale, alienation, or commitment of our gold on Monday, September 23, and I welcome your support.

IN DEFENSE OF PRIVACY

The SPEAKER pro tempore. Under a previous order of the House, the gentleman from Connecticut (Mr. MCKINNEY) is recognized for 5 minutes.

Mr. MCKINNEY. Mr. Speaker, I rise in support of H.R. 16373, the Privacy Act of 1974. This bill is virtually identical to legislation I helped to introduced when I first came to Congress 4 years ago. Since that time I, along with every other citizen in this country, have been alarmed over the consistent erosion and Government abuse of our right to privacy. The Watergate revelations, in which we learned of Government surveillance of innocent citizens, illegal wire-

tapping, misuse of income tax data, collection of personal dossiers, have helped to create a growing distrust and even fear of Government in the minds of millions of Americans.

To meet these myriad abuses I had hoped Congress would promptly enact a much more comprehensive and inclusive bill than is represented by H.R. 16373. The aim of this legislation is to safeguard individual privacy from the misuse of Federal records and to provide that inividuals be granted access to records concerning them which are maintained by Federal agencies. However, I recognize there must be a first step in protecting the personal freedom of privacy and there is no better place to begin than the safeguarding of individual records held by Government agencies.

We have reached the point in our history when we must determine whether we are to be a people who controls their Government or a Government that controls its people. By passage of this legislation we are insuring that it is, indeed, the people who control their Government for this bill, in a sense, gives a conscience to our Government computers and tells our citizens that they are indeed individuals, not mere numbers on a card.

For the first time the American public will be made aware of the existence and characteristics of all personal information systems kept by every Federal agency and each citizen will be able to review and correct his record as compiled by Government agencies, to correct inaccurate or misleading information in the records that can be so damaging. For the first time citizens will be able to control the transfer of personal information about him from one Federal agency to another for nonroutine purposes and no records concerning political and religious beliefs of individuals can be maintained by Federal agencies unless expressly authorized by law or an individual himself. Moreover, the availability of records containing personal information will be limited to agency employees who need access to them in the performance of their duties.

In essence, H.R. 16373 provides a series of basic safeguards for the individual to help remedy the misuse of personal information by the Federal Government and reassert the fundamental right of personal privacy of all Americans.

Mr. Speaker, we have a long way to go before our citizens are once again confident that the constitutional guarantee of privacy is not a mere abstraction but is a fundamental facet of our system of Government. The Privacy Act of 1974, as I have said, is a first step to reinstilling confidence that Government does indeed respect the freedoms guaranteed in the Constitution.

I would hope my colleagues in the Congress will not rest complacent upon passage of the legislation before us today. There is much work to be done in the area of privacy and we must address the many other aspects—protection of income tax records; protection of computer files held by private industry; privacy of bank records and credit ratings; surveillance of innocent citizens, to name but a few—to once again insure privacy as an intrinsic individual liberty, inherent to our system of democracy.

FEDERAL ELECTIONS COMMISSION

The SPEAKER pro tempore. Under a previous order of the House, the gentleman from Minnesota (Mr. FRENZEL) is recognized for 60 minutes.

Mr. FRENZEL. Mr. Speaker, the Federal Election Campaign Act Amendments of 1974—Public Law 93-443—signed into law just last month by President Ford, is an important milestone in the reform of our system of campaign financing. In the past, probably the most important reason for the failure of campaign finance reform legislation has been the lack of an effective enforcement agency or mechanism. The 1974 law attempts to remedy this problem by providing a vehicle for fair, vigorous, equitable enforcement—a Federal Elections Commission.

The Commission is established to administer, seek to obtain compliance with, and formulate overall policy for the disclosure requirements enacted by the 1971 law, contribution and expenditure limitations, public financing provisions, and other provisions of law which relate to campaign financing.

With the passage of the 1974 act and establishment of the Commission, Congress has made a most important official move to recognize, and to begin to redress, the dangerous lack of public confidence in politics and government at all levels.

The Commission is unique among Federal institutions. Two of the Commissioners are appointed by the President; two are appointed by the Speaker of the House upon the recommendations of the majority and minority leaders of the House; two are appointed by the President pro tempore upon the recommendations of the majority and minority leaders of the Senate. All six voting members must be confirmed by both the House and Senate for 6-year terms. In recognition of the complexity, scope, and importance of the new Commission's work, the law states that "members shall be appointed on the basis of maturity, experience, integrity, impartiality and good judgment."

The effectiveness of the new law will be dependent on the ability of the Commission to oversee and enforce the act's intricate provisions and maintain its own integrity, independence, and impartiality in dealing with sensitive issues.

Both the Congress and the President are presently contemplating their choices of nominees for these crucial positions. To aid this process, it may be helpful to list some of the vast array of responsibilities and powers vested in the Federal Elections Commission and to review some of the regulatory decisions required immediately. The following is a summary of the major duties and powers of the Commission, categorized by function, while, while not all-inclusive, will indicate their range and complexity.

GENERAL RESPONSIBILITIES

After being nominated, the Commissioners-designate will be subjected to confirmation hearings. They will be expected to display knowledge of the law, a grasp for the failings of the old system, and a willingness to devote long hours to assuring the smooth functioning of the Commission.

Upon final appointment, the Commissioners will need to find a office/headquarters. There will be countless budgeting, equipment, and hardware decisions. The Commissioners will have to appoint a staff director, general counsel and other members of the staff. Skillful personnel selection is essential if the Commission is to meet its varied responsibilities. Considerable administrative skill will be needed at this stage. A few wrong decisions might seriously impair the future operation of the Commission.

The Commissioners must develop written rules for the conduct of the Commission's activities. These rules will provide guidelines for the staff and future Commission decisions.

The Commissioners will be responsible for formulating overall, general policy for the 1971 act—containing disclosure provisions—the criminal code sections relating to campaign financing—contribution and expenditures limitation and so forth—and the Presidential Election Campaign Fund Act—public financing provisions.

Another important initial step will be to determine the ability of the Commission to utilize the resources of other Government agencies such as the General Accounting Office and Library of Congress. These agencies could be extremely helpful to the Commission in administering and enforcement of the law.

The 1974 act is unique in that it gives the Congress power to veto the rules and regulations of the Commission before they go into effect—that is within 30 legislative days. All rules and regulations proposed by the Commission must be submitted to the appropriate committee or committees of Congress with a detailed explanation and justification. Since it will be at least 30 legislative days before they are approved—over twice as long if they are vetoed—the Commission must submit its proposed regulations long in advance of the first primaries in 1976—probably by around September of 1975. In the interim—since candidates will undoubtedly begin campaigning for the presidency early in 1975 and some provisions of the act will have immediate ramifications—the Commission will have to give considerable guidance to candidates and committees.

The Commissioners will be responsible for drawing up all budget requests and submitting them to both the Executive and Congress.

The Commission is required to report to the President by March 31 of each year. This statement must contain a detailed summary of the Commission's activities, together with recommendations for legislation and other actions.

Another important general responsibility is to assure that all interested and affected parties are informed about their duties and responsibilities under the act. The new law is often technical, complicated, and often imprecise. Penalties for

violations are severe. The Commission must do everything in its power to educate candidates, campaign workers and treasurers, party officials, the press, and other groups and individuals to assure that as few violations as possible are unintentional and unwitting. If the Commission becomes bogged down in policing violations that are committed out of ignorance, intentional and serious violators may be able to escape punishment for their transgressions. The Commission should publish manuals, fact sheets, and summaries of the act to help explain the law to affected parties.

REPORTING AND DISCLOSURE

The 1971 Federal Election Campaign Act, as amended by the 1974 act, cites some specific responsibilities of the Commission under its disclosure provisions:

First, each political committee which receives contributions or makes expenditures in excess of $1,000 must register with the Commission. Guidelines and regulations will have to be drawn up to administer this requirement.

Second, reports of a specified nature must be filed at certain times by political committees and candidates. The Commission will be responsible for supervising these provisions and establishing appropriate regulations.

Third, all persons who make expenditures in excess of $100 must also file with the Commission. Rules will have to be drawn up to administer this separate provision.

Fourth, the Commission must develop, furnish, and distribute the prescribed forms for making the required reports and statements under the disclosure provisions. These forms will probably have to be more clear and precise than at present if contribution and expenditure limitations are to be adequately enforced.

Fifth, the Commission must prepare, publish, and furnish a manual setting forth uniform, recommended bookkeeping and reporting methods.

Sixth, it must develop a method for filing, coding, and cross-indexing of contribution and expenditure information. Existing computer storage facilities must be integrated to achieve genuine full disclosure.

Seventh, the Commission must make reports available for public inspection within 2 days after receipt.

Eighth, reports and statements must be preserved for a period of 10 years from the date of receipt, except that in the case of House races they need be preserved only 5 years.

Ninth, the Commission is responsible for compiling and maintaining a cumulative index of reports and statements filed with it, published in the Federal Register and available for purchase directly or by mail.

Tenth, it is required to periodically publish a list of those who did file and those who did not file disclosure reports.

Eleventh, from time to time the Commission must make audits and field investigations of reports and statements filed with it. It also must make investigations of alleged failures to file reports.

Twelfth, apparent violations are to be reported to the appropriate enforcement authorities by the Commission.

Thirteenth, the Commission shall publish regulations of general applicability prescribing the manner in which debts and other contracts, agreements and promises are to be reported.

Fourteenth, a copy of each statement filed with the Commission must be filed with the Secretary of State—or other comparable State official—of the appropriate State. To assure uniformity and public dissemination of these reports, the Commission will have to issue guidelines and regulations. In order to administer and enforce this provision, the Commission will probably need to establish a liaison with the National Association of Secretaries of State—NASS—and other groups of State election officials.

Fifteenth, the Commission will have the power to waive reporting requirements for certain categories of candidates and political committees, as long as it carries out the basic intent of the act. There may be numerous applications for relief, and the Commission may need guidelines to decide on individual cases.

Sixteenth, acceptable standards must be established to determine if candidates and political committees have taken sufficient action to secure full contributor information—that is, occupation and place of business.

Seventeenth, the Commission must establish standards for the requirement for filing of statements on convention financing.

Eighteenth, the Commission is responsible for policing the retention of records by political committees and candidates. It must decide on the period of time the records are to be kept and on the manner in which these records are to be kept.

ADDITIONAL RESPONSIBILITIES

The 1974 act adds several important, additional requirements under the disclosure provisions.

Multicandidate committees supporting candidates in numerous states presently must file almost daily in congressional and presidential election years. The Commission will have the discretion to allow these committees to report not less frequently than monthly. Guidelines will have to be established to sort out the many applications for relief under this provision.

The 1974 act requires candidates to designate principal campaign committees which will compile the reports of all committees and persons acting on behalf of the candidate. Procedures will have to be established for establishing and registering principal campaign committees, for identifying those agents who are authorized to make expenditures on behalf of a candidate, and for determining and registering auxiliary committees.

Each candidate is required to make all expenditures through campaign depositories—national or State banks. Rules and regulations will be needed for designation of candidates' campaign depositories, for State depositories of Presidential candidates, and for maintenance of petty cash accounts.

One of the most difficult provisions to administer and enforce will be the requirement that all earmarking be disclosed. The Commission will have to police and develop procedures for reporting earmarked funds and for assuring full identification of the original source and ultimate recipient.

The definition of contribution includes the phrase "anything of value." The purpose of this phrase is to include donations that cannot be classified as deposits of money, loans, cash, and so forth—that is contributions in-kind. Clearly, all such donations must be reported. However, it will be most difficult to set a specific value on the use of an individual's car, a storefront, an airplane, a media consultant, and other similar goods and services. Yet, guidelines and regulations to determine the exact value of such contributions are mandatory if the contribution and spending limitations are to be enforced. The Commission will have to evaluate the various types of in-kind contributions and make sure that they are reported at full value.

The 1974 act allows excess campaign contributions to be used for the purpose of supporting activities of Federal officeholders—as well as for other legal purposes. The Commission will have to promulgate rules for the disclosure of funds used in this manner.

Under the new law, a candidate who wails to file a disclosure report will be prohibited from running again for office. The Commission will have to decide upon the ground rules for this provision: If a candidate files a day late, will he be disqualified from running? An hour? A week? If a candiate fails to file a complete return, should he be disqualified?

Section 308 of the new law requires not only political committees and organizations which attempt to influence elections to file reports, but also any person who commits any act directed to the public for the purpose of influencing the outcome of an election. This broad and imprecise language will have to be refined to show who is covered, the reporting requirements, and the types of activities covered. The complexity of this section will probably require lengthy regulations. Section 308 is really a new law in and of itself.

The new law makes certain exceptions to the definitions of contributions and expenditures for the purpose of disclosure. Food and beverages provided on an individual's residential premises up to $500, unreimbursed travel expenses up to $500, and slate cards and any other printed listing of three or more candidates made by a State or local party committee are all exempted. The Commission will have to develop a mechanism for reporting the items, which are exempt if below $500, once the contribution or expenditure does exceed $500. It will also have to define what a State and local party committee is for the purposes of the slate card exemption.

CONTRIBUTION LIMITATIONS

The new law sets limitations on the amount individuals and political committees can give to a candidate and his supporting committees. The Commission is responsible for administering and enforcing this provision.

The definition of contribution is rather vague and nebulous and needs extensive clarification and refinement, much of it via regulation and on a case-by-case basis by means of advisory opinions. A clear, precise definition of contribution is necessary, otherwise special interests may use the vagueness to circumvent the limitations.

The Commission will have to develop rules regarding contributions that are exempted from the definition of contributions for the purposes of the limitation; for example, food and beverages up to $500, unreimbursed travel expenses, slate cards, and listings of three or more candidates.

Similarly, the Commission will have to develop precise estimates for the worth of various contributions in-kind. Hundreds of questions will have to be answered if the contribution limitations are to be applied equitably and effectively.

The Commission will have to determine what the normal day-to-day expenses are for special interest and party committees, and to what extent these expenses should be attributed to the limitations. For example, the congressional campaign committees provide services and have day-to-day expenses which total up to $16,000 per Congressman. If the value of these goods and services are attributed to each candidate's limitations, everybody will be in violation of the law. On the other hand, some services, such as the recording studios and media consultant work, directly influence a candidate's chance of being elected. The Commission will have to carefully scrutinize many of the activities of both party and special interest committees to ascertain which are legitimate campaign expenses. Fine lines will have to be drawn, including distinctions between services provided by party committees and the same services provided by special interest committees.

The Commission will have to develop a mechanism for determining when the aggregate contribution limitations have been reached. Computer processing coupled with easy identification of donors will be needed to instantly locate those who have exceeded the limitations. Insofar as possible, violators must be exposed before the election, so that the American voters will be able to register their disapproval of such activities.

The Commission will have to apply contribution limits to Presidential candidates who may also be running as Senate or House candidates. For example, Texas will permit LLOYD BENTSEN to run for Senator and President at the same time. Can AmPAC, COPE, or any other political committee give him $5,000 as a Presidential candidate and another $5,000 as a senatorial candidate?

The legislative language of the conference report states that if a person exercises any direct or indirect control over the making of a contribution, then such contribution shall be counted toward the limitation imposed on that person. In other words, a political committee or individual cannot contribute up to the maximum and then direct someone else—a subsidiary committee, for example—to contribute more. The Commission will have to develop standards under which affiliates and organizations—which are otherwise associated—may qualify as separate entities for the purpose of the contribution limitations. In order to make separate contributions, do two organizations have to have completely independent decisionmaking processes?

EXPENDITURE LIMITATIONS

The Commission is responsible for administering and enforcing the provisions of the new law which place limitations on the amount which candidates can spend.

The definition of expenditure is not precise, and needs extensive clarification and refinement, much of it via regulation and on a case-by-case basis by means of advisory opinions. A clearer definition of expenditure is necessary if the limitation is to be effective.

The Commission will have to develop rules regarding the expenditures that are exempted from the definition of expenditure for the purposes of the limitation—that is, food and beverages up to $500, unreimbursed travel expenses et cetera.

The Commission must determine the spending limits for each race—based on Census Bureau population data—and the cost-of-living increases in the limits for the 1976 elections—based on Bureau of Labor Statistics data.

In order to ascertain whether or not a specific candidate has or is likely to exceed his spending limitation, the Commission must develop a mechanism for determining aggregate spending by a candidate, including the capability for quick identification of authorized spending committees and individuals.

The Commission will have to determine whether certain preprimary expenses should be credited toward a candidate's spending limitation. Candidates could spend thousands of dollars to build up their name recognition before the campaign even begins. Should the many informal phone calls and lunches and dinners for presidential hopefuls be credited against their spending limits if those expenses are run up in 1974 and 1975? Should Presidential candidates be allowed to set up commissions and fly their own airplanes around the country in attempts to launch their campaigns? If such expenses are not counted toward the limitation, early starters and wealthy candidates would have an important advantage. Yet, if they are credited toward the limitation, serious first amendment questions might arise.

The Commission will have to determine whether certain expenditures are made in a primary or general election. If bumper stickers are bought in the primary, but not used until the general, which election spending limit should they be attributed to? When candidates carry over huge inventories from the primary to the general election, which spending limit should the inventories be credited to? If a billboard is bought for the primary, but is also used in the general election, how should it be prorated between the primary and general? To what extent should candidates be allowed to shift their expenses from the primary to the general and vice versa? These and numerous other similar questions will have to be answered by the Commission.

The Commission must prescribe rules for cases in which a candidate for nomination for election to the office of President makes an expenditure in two or more states. It must determine how much of each such expenditure shall be attributed to the candidate's expenditure limitation in each state.

The Commission must define what constitutes a separate election. For example, in some States, the party convention is tantamount to the primary election.

There may be huge administrative problems in attempting to prorate expenses. Candidates frequently run as teams and conduct campaigns jointly. How should a commercial or direct mailing be prorated toward the spending limitations of several candidates? How should these costs be allocated? This may be an extremely difficult task, especially when there are important State, local, and Federal races in the same State at the same time. For example, a candidate for the Senate may simply credit as much of his expenses as possible to the gubernatorial candidate, thereby circumventing the law. This might be relatively simply to do with expenses such as campaign headquarters, staff, and election day efforts to get the voters to the polls.

There are also problems with cross-endorsements and independent committees. In 1972, a group of conservatives in Kansas published ads which said essentially, "Nixon-Docking—Men You Can Trust." Should these ads count toward both candidates' spending limits? Since it was not fully authorized, can this type of advertising be forbidden? Innumerable administrative and constitutional problems arise whichever way these questions are answered.

It will be difficult to monitor and police many types of expenditures.

The expenditure limitations will raise many questions about how to assess the value of personal services or use of personal property. How does a candidate value the services of a President Bart Starr, Serpico, or Archie Bunker when they campaign on his behalf?

Many questions may arise over the rigidity and inflexibility of campaign spending limits. What happens if a candidate goes on the air 3 days before the election, using time booked and paid for well in advance, and attacks his opponent with a sensational, but phony exposé, and his opponent has already spent up to his limit? Is the opponent not permitted to purchase additional air time to reply? If a candidate reaches his expenditure limit and a warehouse of campaign materials is destroyed by fire, is the candidate allowed to spend more money to replace the destroyed material, thereby exceeding the legal limit? If there was insurance to cover the loss, would the insurance payment have to be declared as a campaign contribution and could the candidate spend the insurance money for his campaign and exceed his limitation?

Candidates are allowed to spend up to 20 percent of their limitation for fundraising expenses. Must such expenses be

made out of a separate account? What constitutes a fundraising expense? What candidate may normally enclose a self-addressed envelope in all his mass mailings for fundraising purposes. Would it be equitable to allow one candidate to count mass mailings as a fundraising expense, but not to allow another to? Should television spots, radio commercials, and newspaper ads qualify as fundraising expenses under certain circumstances? Does the State spending limit in Presidential primaries apply to fundraising expenditures as well, or can a candidate spend $2 million in California and New York to raise funds for New Hampshire and Florida primaries? These are just a few of the types of questions that are likely to be asked.

PARTY SPENDING

The new law allows political parties to make additional expenditures on behalf of candidates. A mechanism must be developed to give an accurate accounting of party spending on behalf of a candidate.

The Commission will have to establish guidelines for defining what the national committee of each party is, in addition to defining what a State and local committee is. It will have to determine who actually acts for the party at the State level—that is, the Mississippi National Democrats or regular Democrats. It will have to determine whether local committees are actually subordinates of State committees and whether party committees have been set up as fronts to channel additional money into a candidate's campaign.

INDEPENDENT EXPENDITURES

The Commission must promulgate rules and regulations regarding independent expenditures on behalf of candidates.

The independent expenditure provision will encourage certain types of spontaneous, grassroots activities by exempting them from the cumbersome requirements of the law. However, if a candidate urges supporters to undertake such activities or these activities are in some way coordinated, has the law been violated? At what point will "spontaneous" independent expenditures be considered too organized? This provision could create dozens, perhaps hundreds, of constitutional lawsuits. The Commission may be forced to devote many hours of legal time to resolving the complicated issues surrounding the independent expenditure provision.

The Commission will also be responsible for promulgating rules for the provisions which allows candidates to make expenditures from their personal funds and those of their immediate family.

MISCELLANEOUS PROVISIONS

Preemption of State law: The new law preempts all State laws in the area of campaign financing, but does not precisely define the types of laws which will be superceded. For example, a Florida law prohibits candidates from handing out anything of value to voters during the campaign. Is this law preempted by the 1974 act? The Commission will have responsibility for supervising this provision.

Clearinghouse: The Commission will function as the national clearinghouse on election information. The clearinghouse supervises the conduct of a wide variety of studies in addition to operating an information dissemination center. It overseas studies on State and local election boards, voter registration, State campaign financing laws, election administration and various other related issues. It has a mailing list which includes thousands of State boards of election and many other State, local, and Federal officials.

Honorariums: The Commission will have to promulgate regulations for and answer questions about the honorarium provision contained in the new law.

Corporate contributions: While the ban in corporate conributions has long been in effect, there are still many fuzzy areas of interpretation and many practices that are borderline violations of the law. Further, the Supreme Court has never—but may in the near future—ruled on the constitutionality of this provision. Finally, the Commission will be responsible for supervising separate segregated funds set up under sections 610 and 611.

Other provisions: The new law reduces the statute of limitations for violations of campaign financing laws. It also maintains the requirement that newspapers charge candidates the normal comparable charge for advertisements. The Commission will supervise these provisions.

PUBLIC FINANCING

General responsibilities: The Commission is responsible for formulating overall policy with respect to the public financing provisions contained in the new act, in addition to those contained in the 1971 Presidential Election Campaign Fund Act. It must establish a liaison with the Secretary of the Treasury to assure the smooth functioning of the fund. The Commission is also responsible for the administration and enforcement of the public financing provisions.

The Congress has the power to veto any rules and regulations promulgated by the Commission under the public financing provisions. All rules and regulations proposed by the Commission must be submitted to the appropriate committee or committees of Congress along with a detailed explanation and justification.

General elections: The Commission must establish rules and regulations regarding the methods by which candidates for President establish eligibility for public funds, including designation of the candidate's authorized committee, determination of funds available, bookkeeping requirements, records, and information, and audits. The Commission is required to determine major and minor parties and whether or not each party's candidate is eligible for money. This determination may be more difficult than it initially seems, because if a party is within a 1,000 or so votes of the 5 or 25 percent requirements, it may demand a recount of all national Presidential returns. The Commission must determine the entitlement of eligible candidates to subsidies and factor in the cost-of-living escalator provision. It must then certify each candidate's eligibility to the Secretary of the Treasury. A liaison with the Department of Treasury is essential to assure that the funds are automatically transferred and so that the Commission can easily find out precisely how much is in the fund.

After each Presidential general election, the Commission must conduct a thorough examination and audit of the campaign expenses of each candidate, and determine if any repayments are necessary.

The Commission is responsible for collecting and auditing the five reports from each candidate that are required in the month before the election. As soon as possible, it must prepare and publish a summary of each statement for the Federal Register.

As soon as possible after the Presidential general election, it must submit a report to the Congress listing qualified campaign expenses, the amounts certified by the Commission and the amount and circumstances of any repayments.

The Commission is authorized to appear and participate in judicial proceedings, including those to recover payments, to seek declaratory and injunctive relief and to appeal any decision by the courts. It may initiate suits that are appropriate to implement and construe any provision of the act.

The Commission oversees the penalty provisions, including the prohibitions on making excess campaign expenses, unlawful use of payments, false statements, kickbacks, unauthorized expenditures, and contributions, and unauthorized disclosure of information.

Presidential conventions: The Commission must make sure that a separate account is established to pay for presidential nominating conventions. It is required to determine the eligibility of each party and each party's entitlement to funds. In the process, it must define the manner in which each national party designates the committee eligible to receive financing, the information that committee must supply to the Commission, and the timing and manner of the committee's disclosure of records and books. The Commission must certify to the Secretary of the Treasury eligibility for payments from the Fund. It must determine what constitutes a legitimate convention expense. It must also formulate rules and regulations regarding the eligibility of new and third-party candidates and committees for preconvention and convention financing.

As soon as possible after the conventions, the Commission must conduct a thorough and complete examination and audit and determine if any repayments are necessary. It must also supervise the penalty provisions, including the prohibitions on excess expenses, unlawful use of payments, kickbacks and illegal payments.

Since the parties are eligible to begin receiving funds on July 1, 1975, the Commission should finish work on the rules and regulations by February of next year—only 3 months from now.

Presidential primaries: The Commis-

sion must establish rules and regulations regarding the methods by which candidates for nomination for President establish eligibility for public funds, including designation of the candidate's authorized committee, determination of funds available for matching, bookkeeping requirements, records and information, and audits. Determination of the funds that are available will be close to impossible, because the Commission will have to decide before the primaries how much money from the fund will be spent on the general election and conventions. The remaining funds are to be made available for the primaries, to be distributed equitably among the eligible candidates. The Commission must also decide upon a schedule for the equitable distribution of the primary moneys.

The Commission must determine the entitlement of eligible candidates to primary subsidies and certify each candidate's eligibility to the Secretary of the Treasury.

The Commission is required to conduct a full examination and audit of qualified campaign expenses of every candidate after each matching payment period, and determine if any repayments are necessary.

As soon as possible after the matching payment period, the Commission must submit a report to the Congress listing qualified campaign expenses, the amounts certified by the Commission, and the amount and circumstances of any repayments.

The Commission is authorized to appear and participate in judicial proceedings arising from the provisions of the Presidential Primary Matching Payment Account Act, including those to recover payments, to seek declaratory and injunctive relief and to appeal any decision by the courts. It may initiate suits that are appropriate to implement and construe any provision of the act.

The Commission oversees the penalty provisions, including the prohibitions on making excess campaign expenses, unlawful use of payments, false statements, and kickbacks and illegal payments.

Enforcement: The Commission is charged with overseeing the enforcement of title III of the Federal Election Campaign Act of 1971, as amended—the disclosure provisions—the Presidential Election Campaign Fund Act, the Presidentian Primary Matching Payment Account Act, and the following sections of title 18, United States Code: 608, limits on individual and organization contributions, candidate and family contributions, aggregate individual contribution limits, independent expenditures, and candidate and party expenditures; 610, prohibition on corporate and labor union contributions, administration of separate segregated funds; 611, prohibition on contributions by Government contractors; 613, prohibition on contributions by foreign nationals; 614, prohibition on contributions in the name of another; 615, prohibition on cash contributions over $100; 616, prohibition on excessive honorariums; and 617, fraudulent misrepresentation of campaign authority.

The Commission must coordinate enforcement efforts with the Department of Justice, FBI, Clerk of the House, and Secretary of the Senate.

General responsibilities include the examining and auditing of about 250,000 pages of disclosure reports every 2 years. The Commission will probably be forced to conduct extensive field investigations of alleged violations.

The Commission will have numerous powers to enforce the law. All of these powers can be exercised only by the Commissioners. The powers include:

First, to require any person submit reports and answers to questions.

Second, administer oaths and affirmations;

Third, issue subpenas;

Fourth, take depositions;

Fifth, pay witnesses fees and mileage;

Sixth, initiate, defend or appeal any civil action involving the provisions of law under the Commission's jurisdiction;

Seventh, render advisory opinions;

Eighth, make, amend, and repeal rules;

Ninth, conduct investigations and hearings expeditiously;

Tenth, petition the courts to require compliance with Commission subpenas; and

Eleventh, petition the courts for quick rulings on questions of constitutionality.

The Commission will be able to use each of these powers to investigate all violations. In the first 2 years of operation of the 1971 act, there were 6,000 violations in House races, over 1,000 in Senate races, and over several hundred in the presidential election. These numbers include only violations of title III—the disclosure provisions. With the institution of contribution and expenditure limitations, the number of violations will probably be substantially greater. There is no way of telling how many violations of the public financing provisions will be uncovered.

The act contains a specific, fairly lengthy procedure for the investigation and resolution of each violation, including the requirement that the Commission endeavor to correct each violation by means of conference, conciliation, and persuasion.

The Commission is required to render advisory opinions in response to any written request by Federal officeholder, candidate, or political committee as to whether any transaction or activity would constitute a violation of the law. The Commission must make each such request public, provide an opportunity for interested parties to comment, and respond in a reasonable period. Any action taken on the basis of an advisory opinion is presumed to be in compliance with the act. Due to the many ambiguities contained in the act, it is likely that the Commission will receive hundreds, probably thousands, of requests for advisory opinions in the first couple of years.

The new law requires the Attorney General to report to the Commission the disposition of each violation within 60 days after it receives the violation and every 30 days thereafter. The Commission will be responsible for seeing that this provision is complied with and that the Justice Department moves expeditiously on any violation forwarded to it.

CONCLUSION

Fears have been expressed that even though the job of Commissioner is full time, Commissioners would not have to spend much time on the job. Since the Commissioners cannot delegate any of their powers or authority to members of the staff, the above analysis shows that, if the job is done right, being a Commissioner may be even more than a full-time job, especially for the first 2 years.

The law goes into effect on January 1, 1975. Candidates and committees will need almost immediate guidance on how to comply with the provisions of the new law. Rules and regulations will have to be drawn up immediately for the new section 308—requiring persons who indirectly influence elections to report the same as political committees and candidates. Regulations for the Presidential primary matching scheme must be drawn up immediately. The parties will need to have guidelines and regulations for the convention financing. Since all regulations will take at least 30 legislative days to enact, they should be complete by February 1975. Rules and regulations for the other provisions of the law will have to be complete by September if they are to go into effect before the New Hampshire primary.

It is imperative that the Commissioners be appointed and confirmed as soon as possible. Unless the Federal Elections Commission is quickly set up, chaos may ensue when the law goes into effect on January 1st. All candidates, officeholders and political committees deserve to know promptly what ground rules they will be operating under.

I include the following:

THE POLICING OF CAMPAIGN REFORM

In any battle over political reform, a key question—often *the* key—is how the rules will be enforced. This is especially true when the new rules are as far-reaching and complex as the program of spending and contributions limits, reporting requirements and public financing of presidential campaigns contained in the landmark reform act finally signed last month.

Throughout the long debate preceding passage of that law, the Senate favored entrusting the enforcement of its provisions to a *strong, independent agency. The House* preferred a less powerful supervisory panel closely tied to Congress. Such a group, House members argued, would be more sensitive to the practicalities of politics; in other words, enforcement might not always be too strict. These contrasting views were finally reconciled by a conference agreement to create a fairly strong enforcement commission with six full-time, voting members—two (of different parties) to be nominated by the President, two by the Senate president pro tempore, and two by the Speaker of the House. All six must be confirmed by both houses of Congress. This approach, many believed, could produce a panel that would combine the pragmatism treasured by the House with the independence and stature the Senate emphasized.

The Senate nominations have now been made, and it appears that the spirit of amiability has prevailed after all. The Democratic nominee, chosen by majority leader Mike Mansfield (D-Mont.), is Joseph F. Meglen of Billings, Montana, an attorney who is a longtime friend of Sen. Mansfield and is also his former campaign treasurer. The Senate's Republican nominee, selected by minority leader Hugh Scott (R-Pa.), is Joan D. Aikens

of Swarthmore, a businesswoman and president of the Pennsylvania Council of Republican Women. Both Mr. Meglen and Mrs. Aikens are said to have extensive political experience.

The fact that these nominees are little-known outside their own domains does not mean that they necessarily lack the competence to enforce a whole new package of federal election laws. The problem is precisely that they are so little-known and that their personal affiliations with the Senate's leaders seems to have been such a large factor in their selection. It would be equally objectionable if the post were regarded as a sinecure for a former member of Congress, whose main attributes were friendliness and longevity. Such nominees simply do not bring to the elections commission the national stature and recognized impartiality which can best promote public confidence in the panel—and in the heralded reforms which the commission will have to enforce. Nor does it help that Sens. Mansfield and Scott tried to zip their nominations through the Senate on the last day before the recess, the same day that their selections were announced. That effort was aborted and a hearing will be held—but the impression of coziness and myopia remains.

It is now up to the President and the Speaker of the House to set a constructive standard by making nominations that are less parochial and more deserving of general acclaim. The Congress has an obligation, too, to make the confirmation process meaningful. Mr. Meglen, Mrs. Aikens, and the four others yet to be named should be questioned extensively about their views on what is wrong with the old system of campaign finance, their understanding of the new law and the commission's responsibilities, and the time they intend to devote to the job. In the present climate, such scrutiny would be almost routine for nominees to any other regulatory post. It is doubly important in this case, given the necessity of showing from the start that the new election commission will not be the captive of any party, individual or interest group.

PROJECT INDEPENDENCE—A PERSPECTIVE ON RESOURCES AND COSTS

The SPEAKER pro tempore. Under a previous order of the House, the gentleman from Idaho (Mr. HANSEN) is recognized for 30 minutes.

Mr. HANSEN of Idaho. Mr. Speaker, Project Independence is a goal that requires further examination before a misguided sense of patriotism and nostalgia for the good old days propels us into programs that may not be economically viable and energy productive. While the raison d'etre of this national goal stems from the realization of the serious economic and political implications of continued, and increasing, reliance on imported petroleum, the full meaning of Project Independence is only beginning to dawn on the public sector. Two questions that need to be answered are: How? And at what cost?

Clear definition of how this national goal is to be achieved has yet to be developed. Most scientific and economic analysts agree that we cannot achieve our energy goals by 1980, the target date for Project Independence. The costs of this program—in price increases, taxes, Government spending, and environmental damage—are even more difficult to calculate—but have been projected as high as $985 billion over the next 20 years.

Whatever the final methods and costs, it is almost certain that Project Independence will have the following implications:

First. Energy prices will stay high indefinitely. Experts estimate that the long-term price of gasoline will be about 65 cents per gallon at the pump. At a 5-percent inflation rate, this could rise to over $1 a gallon in a decade. Plans to deregulate natural gas prices and remove controls on other fuels indicate higher utility bills in the years ahead. Taxes are being considered for high-energy-using appliances, such as air conditioners and heaters, and tax surcharges are contemplated on electrical power consumption. Increases in fuel taxes, auto registration and parking fees are also possible to curb energy consumption.

Second. The Federal Government will have to underwrite the energy effort in a gigantic program of Federal subsidies, price guarantees, and insurance against economic failure. These incentives will be necessary to coax energy investors into pumping billions of dollars into developing unproved methods of producing synthetic fuels from coal and oil shale. The private sector has not involved itself in this type of energy program before, because of initial high costs and market uncertainty. The Commerce Department has envisioned a program of price guarantees on specific amounts of synthetic oil. This Government backing would enable an energy investor to obtain funds in private financial markets. Of course, this arrangement could also cost a great deal of money. For instance, an output of 4.1 million barrels a day is anticipated for 1982. If the Government guaranteed a price of $9 a barrel, and the going price of oil is $6 a barrel, the Government would pay the $3 difference. At this production rate, it would cost the taxpayers $12.3 million a day. The Department of Commerce has developed a "worst case projection" that envisions a price support level of $5. This would cost the taxpayers $98.1 billion over a 14-year period. If the price of oil goes high enough, these price guarantees may not be necessary—but stop to consider the enormous cost if Government support is required.

Third. In order to protect our developing energy industry, tariff walls would have to be erected against the possibility of cheaper imports. We might find ourselves looking at the rest of the world paying $4 a barrel for oil while we have to pay $6 a barrel for our domestic production. And might not tariff barriers be adopted by other countries against our products, using the same protectionist rationale? If the price of oil should plummet due to a withdrawal of the United States from the international oil market, will the rest of the world benefit while we continue to pay high prices?

Fourth. The environmental costs of Project Independence are too large to be ignored. A 60-percent increase in coal production portends large scale strip mining, especially in the Western States. Drilling for oil on the Continental Shelf might result in damage to these beaches the east and west coasts. Will a regional rift develop between residents of States bearing the environmental brunt of Project Independence and the residents of those States who only consume energy? What will be the final cost, in lives and dollars, of burning high sulfur coal?

Are we abandoning economics, conservation, and good sense in pursuit of a goal whose achievement is questionable under the present time frame? Do we really treasure energy self-sufficiency over all other considerations? Or would it be more prudent to advocate an increased level of sufficiency that would not forego a sensible level of fuel imports from friendly nations—a level of self-sufficiency that would absorb the effects of an import reduction or cutoff without undue economic disruption? Would it not be more sensible to call for an increased national energy conservation effort rather than pulling out all the stops in favor of increased energy production at any cost? Should we not take the time to carefully analyze the net energy gains that might be realized from the various energy programs that have been proposed?

The implications I envisage from Project Independence portend an era of very high costs to the American consumer, substantial environmental damage and a return to a gloomy and dangerous trend of protectionism. Let us examine our available and potential energy resources in light of these considerations.

OIL

The total oil heritage of the United States—including Alaska—is about 200 billion barrels. of this total, about 50 percent has been recovered and burned; another 30 percent has not yet been pumped from the oilfields; and 20 percent is presumed to exist, somewhere. If we were to rely solely on our own reserves, our oil would last for 20 years at the 1970 consumption rate of 5.4 billion barrels annually. Actually, our consumption level has already surpassed this level and continues to spiral upward. All of the free nations of the world consume 14.6 billion barrels of oil per year. With a total free world reserve of 550 billion barrels of proved reserves, the lifespan of oil for our free world economies would be 35 years.

The Alaskan oil find represents about 20 billion barrels. If we relied on it for our entire oil needs, it would last 4 years, based on 1970 consumption levels. At the most opitmistic estimates of recoverable oil—30 to 50 billion barrels—it should last 6 to 10 years. Increased oil production is a very short term answer to our energy problem. Even if more oil reserves are discovered, it seems to be an inexorable law that consumption rises to meet supply of energy available, and additional finds will at best provide only a small additional measure of short-term relief.

NATURAL GAS

We face an immediate gas shortage over the next two decades that can only be met by increased imports of decreased consumption. From the total estimated world resources of gas and from consumption trends, a natural gas life-span of two to three decades can be projected for the United States. Estimates of our gas heritage range from 1,000 trillion cubic feet to 2,000 trillion cubic feet.

Using an average of 1,400 trillion cubic feet as our initial gas legacy, we have consumed 400 trillion cubic feet. Of the 1,000 trillion cubic feet remaining, three-fourths have yet to be discovered. By 1975 our "gas gap" will amount to 5 trillion cubic feet, or a 20-percent shortage. As far as gas imports are concerned, one of our primary suppliers, Algeria, has recently announced her intention to increase natural gas prices by as much as 986 percent over the next few years. Another possible source is Russia, whose gas resources of 3,000 trillion cubic feet surpass our own. There are questions that attend this possibility, such as who will pay for this venture, and what will the cost of gas be? Estimates indicate that we might be paying $1 billion annually for only 4 percent of our gas needs. The obvious political implications of increasing reliance on Russian natural gas are also too compelling to be ignored.

Some suggestions have been made regarding nuclear stimulation of natural gas deposits. One such project, Project Gas Buggy, involved the underground explosion of a 29-kiloton atomic device, and yielded 300 million cubic feet of gas in 1 year. At our 1970 consumption rate of 23 trillion cubic feet, we would need 7,000 such detonations per year to keep up with demand for gas. To stimulate our gas fields for 10 years would require 19 explosions per day. The technical and scientific manpower and uranium resources expended in such a project cannot be justified to increase the lifespan of our gas reserves by 20 to 30 percent when we need to deploy this talent and resource into nuclear fission and nuclear fusion programs which hold the ultimate answer to our energy problems. However, it would be wise to perfect this technique for use as a possible future option, should conditions so require.

COAL

Coal, the giant of our fossil fuels can be considered as our only viable substitute for oil and gas for short and intermediate term needs.

Our total estimated coal reserve is 1.5 trillion tons, which includes coal discovered and not yet mined plus that presumed to exist. Our 1970 coal consumption rate was 600 million tons. If used solely for energy, this reserve would last for 700 years at the 1970 rate of consumption. However, it is likely that much of our coal will be used in the production of synthetic oil and gas, and its life expectancy would then drop to 250 years. If used solely as a source of chemicals for conversion to proteins and plastics, it could last as long as 100,000 to 150,000 years.

Synthetic fuel technology is in itself a highly complex problem and one that does not appear likely to meet our fuel needs for some time. The National Petroleum Council estimates that by 1985 we could have 26 synthetic fuel plants in operation, with a combined production of 2.3 trillion cubic feet of gas per year. By 1985, our present gas needs of 23 trillion cubic feet will have doubled, so the synthetic gas production will only fill 5 percent of our annual gas needs. We could close the gas gap by a capital outlay of $25 billion by 1985 that would produce synthetic gas to equal projected imports. Estimates to fill all of our gas needs range over $110 billion. To fill our doubled gas needs of 46 trillion cubic feet by 1985, we would need 500 plants of 90 billion cubic feet per year capacity.

At present, 50 percent of coal, 17 percent of natural gas and 13 percent of petroleum are employed for the generation of electricity. The question has been raised whether the utilization of coal alone for electrical generation would reduce the need for synthetic fuels and close the energy gap. Unfortunately, the projected petroleum demand of 6 billion barrels per year and the projected gas gap of 13 trillion cubic feet by the mid-1980's would mean that coal could only fill 17 percent of the oil gap and 29 percent of the gas gap.

One of the frequent criticisms of increased use of coal for electrical generation has been its classification as a "dirty" fuel. Two new processes might go a long way toward solving this problem. One process involves magnetohydrodynamics—MHD—a technique pioneered by the Soviet Union for the combustion of powdered coal with other additives so that the resulting "torch" effect can be used to generate electricity directly. Another possibility for clean coal combustion lies in the fluidized bed combustion in which powdered coal and other chemicals, along with air, are injected into a molten bed of iron. The iron acts as the heat transfer medium to generate steam to produce electricity.

Despite obvious drawbacks, it appears that coal alone holds the possibility for filling our short- and intermediate-term energy needs.

OIL SHALE

We should not overestimate the potential of oil shale to solve our energy problems. The energy required for processing is greater than the energy obtained from the oil in about 99 percent of all oil shales. Most shales—99.2 percent—hold about 25 gallons or less of potential oil per ton of shale. Additionally, although the hydrocarbon content of all shale is estimated at 1,000 trillion barrels, only one part in 10,000 is recoverable, and oil from shale may add only another 10 percent to mans' oil reserves. In a February 26, 1974, statement before the House Interior Subcommittee on Mines and Mining on the prototype oil shale program, Interior Secretary Rogers Morton stated that "oil shale belongs in the future." He reiterated that it will be several years before we will even know the feasibility of commercial oil shale production in terms of economy and technology. Testimony by Gulf and Standard Oil Co. experts acknowledged that actual production of the shale would be unfeasible until 1980–82, with an approximate agreed-upon price of $10 per barrel. The proposed in situ process was viewed as being commercially impractical until at least 1980; this method would have the least environmental impact but presents significant technological challenges. Because of its potential, however, there is need for accelerated research and development of the various in situ processes.

The disposal of spent shale and water problems continue to loom as major problems in the development of oil shale technology. Clearly, our total answer to the energy gap does not lie buried in the Rockies.

SOLAR ENERGY

Solar energy, the bright hope of the future, is currently a giant beyond reach. Solar radiation reaching the Earth is 30,000 times the present industrial power employed by man—6 trillion watts. If our creative talent and technological skills could harness this potential power, our energy resources would last as long as the Sun continued to shine. Despite its abundance, solar energy has not been exploited except in a limited way in water heaters, furnaces, and space applications. Widespread commercial use is not practical at the present time, but systems for heating and cooling or for limited generation of electricity could be built now. For home heating and cooling purposes, cost is the prohibitive factor. but this situation could change dramatically with a steady increase in the price of fossil fuels. The generation of electricity from solar energy is a more difficult challenge, and there are conflicting ideas about the best approach to the problem. Some engineers believe that small generating units located where the electricity is to be consumed are the ideal way to utilize this resource, rather than building solar thermal facilities modeled on existing central power stations. Additionally, the problem of nighttime storage of energy remains to be completely solved, as does the problem of locating solar panels in space. The energy required to launch these panels into space orbit, and the possible adverse effects of micrometeorities on solar panels remain unanswered problems. Scientific projections now indicate a 5- to 20-year leadtime for solar heating and cooling, and projected electrical generation from solar sources is more than 20 years away.

GEOTHERMAL

Considering the heat of the Earth as an energy bank, it is about 100,000 times that of all fossil fuels. Although the total geothermal potential is great, only a small portion of this is accessible. This fraction that could be effectively harnessed for energy needs constitutes about 1 percent of present world energy needs. There are several plans to tap geothermal energy now in preparation. Scientists at Los Alamos are advocating a technique known as hydraulic fracturing—where water pumped down a well under very high pressure is used to fracture underground rocks and create a heat cavity. Using this technique, each well could be converted into a 100-megawatt powerplant with a lifespan of 30 years. There are several dimensions to be noted in this proposal, however. Using a 3-percent per year turnover rate in powerplant relocation, derived from the life expectancy of 30 years, we would need to have 750 such plants by 1985 to supply just 10 percent of our power needs, projected at 750 billion watts. Geothermal energy research